

FIG. 1

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<u>INST</u>	<u>HIT / MISS</u>	<u>DATA</u>
18 ~ LDR[Rm]	HIT	DATA[Rm]
MOV	N / A	—
CMP	N / A	—
:	:	:
:	:	:
20 ~ LDR[Rm]	MISS	—
MOV	N / A	—
CMP	N / A	DATA[Rm]
:	:	:
:	:	:
22 ~ LDR[R1]	MISS	—
24 ~ LDR[R2]	MISS	—
MOV	N / A	—
CMP	N / A	28 ~ DATA[R2]
ADD	N / A	26 ~ DATA[R1]
		MISSED DATA RETURNED OUT OF ORDER

FIG. 2

T02050 "Z8E5Z260

<u>INSTRUCTION</u> <u>TRACE STREAM</u>	<u>DATA</u> <u>TRACE STREAM</u>
:	:
30 ← LDR[R1] -- MISS	32 ← DATA PLACE HOLDER TAG 1
MOV	—
CMP	—
34 ← LDR[R2] -- HIT	36 ← DATA[R2]
38 ← LDR[R3] -- MISS	40 ← DATA PLACE HOLDER TAG 2
ADD	—
MOV	42 ← LATE DATA TAG 2[R3]
SUB	44 ← LATE DATA TAG 1[R1]
:	:
:	:

FIG. 3

<u>INSTRUCTION</u> <u>TRACE STREAM</u>	<u>DATA</u> <u>TRACE STREAM</u>
:	:
46 ← LDR[R1] -- MISS	48 ← DATA PLACE HOLDER 0 PENDING
CMP	—
ADD	—
LDR[R2] -- HIT	DATA[R2]
50 ← LDR[R3] -- MISS	52 ← DATA PLACE HOLDER 1 PENDING
SUB	54 ← LATE DATA[R1]
MOV	—
36 ← LDR[R4] -- MISS	58 ← DATA PLACE HOLDER 1 PENDING
CMP	LATE DATA[R3]
MOV	LATE DATA[R4]
:	:
:	:

FIG. 4

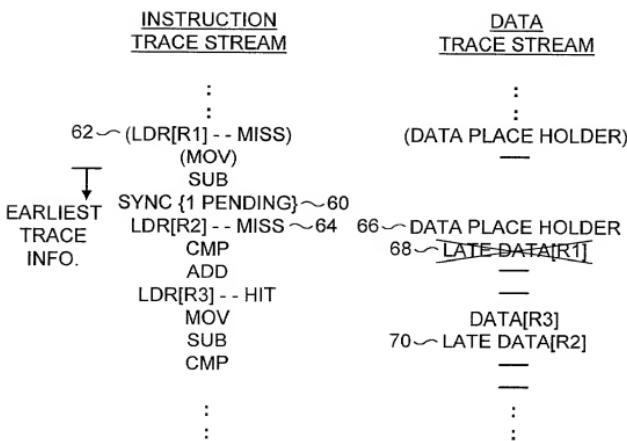


FIG. 5

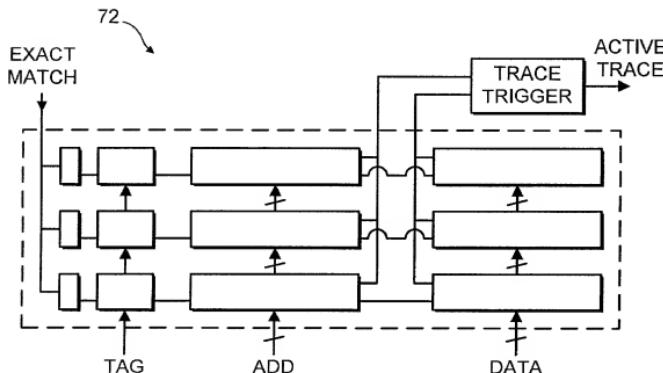


FIG. 6

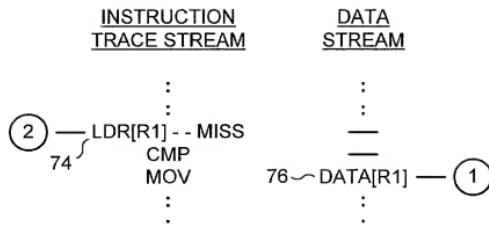
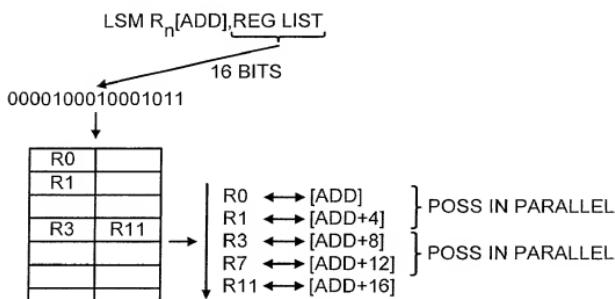
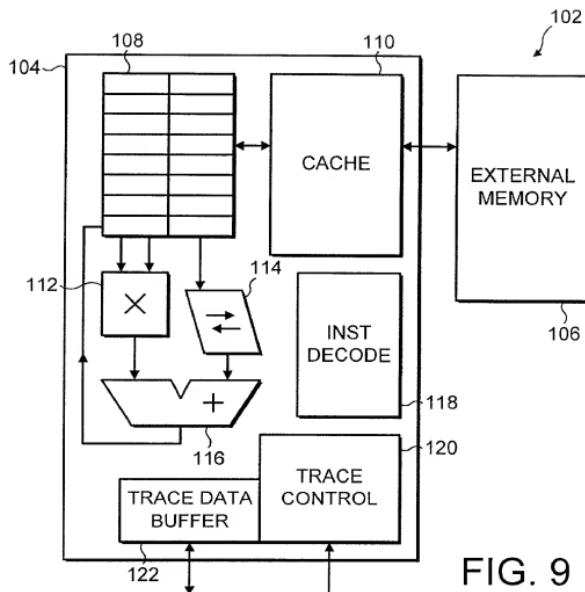


FIG. 7

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EXACT MATCH	ADD MATCH	DATA MATCH	TRACE ACTIVATION POINT
✓	✓	✓	(1)
✓	✓	✗	NONE
✗	✓	✓	(2)
✗	✓	✗	(2)

FIG. 8



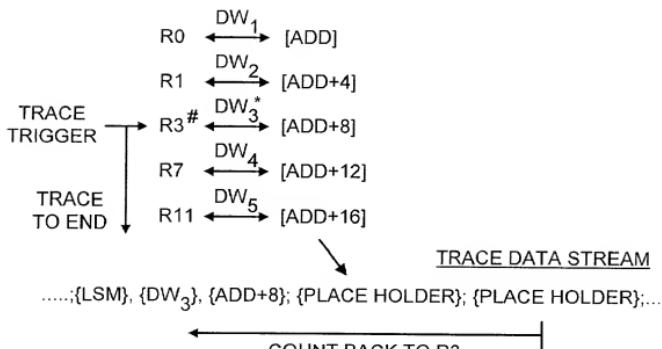


FIG. 11

TOP SECRET//COMINT

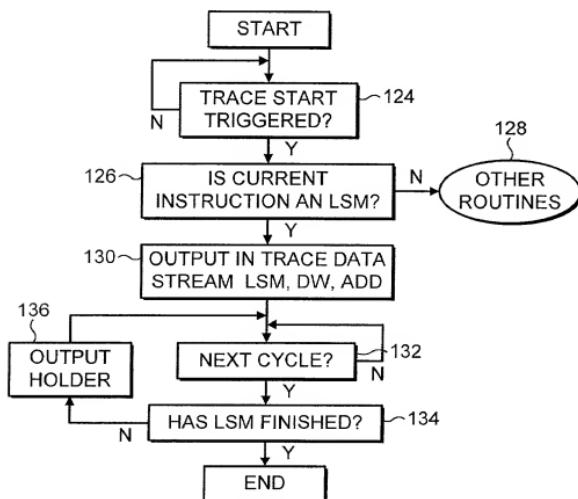


FIG. 12

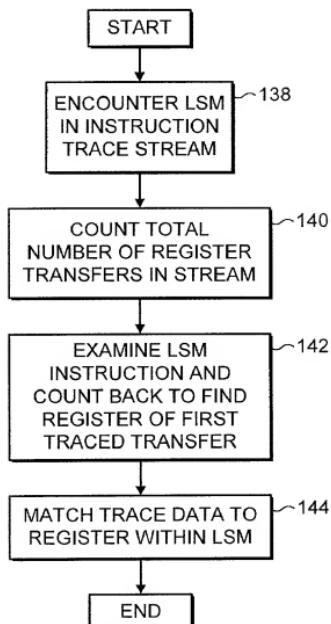


FIG. 13